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EXAMINER
AUGHENBAUGH, WALTER

ART UNIT	PAPER NUMBER
1772	6

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application No.	Applicant(s)	
	10/070,385	PYNENBURG, RORY ALBERT JAMES	
	Examiner	Art Unit	
	Walter B Aughenbaugh	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *42-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *42-58* is/are rejected.

7)☒ Claim(s) *48,53 and 54* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

Claim Objections

2. Claims 48, 53, 54 is objected to because of the following informalities: In regard to claim 48, if there is a second and third melting point, there should be a first melting point as well. Examiner requests that the nomenclature used in claim 48 be amended. In regard to claims 53 and 54, the word "having" in the last line of each claim should be changed to "has" or a similar amendment should be made.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 43, 56 and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 43 contains the trademark/trade name Nucrel. Where a trademark of trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or

trade name cannot be used to properly identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name.

In regard to claims 56 and 57, the structure intended to be recited by the recitations "to soften the sealant layer preferentially to the inner barrier layer" and "softens the inner barrier layer to preferentially to the outer barrier layer", respectively, cannot be ascertained thus rendering claims 56 and 57 indefinite.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 42 and 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Louie et al.

In regard to claim 42, Louie et al. teach a laminate package for an energy storage device (col. 1, lines 5-10 and Fig. 3 and 4) having two terminals (items 34 and 36, col. 3, lines 21-24 and 54-67 and Fig. 1, 3 and 4). Louie et al. teach that the laminate package includes an inner barrier layer for defining a cavity to contain the energy storage device (Fig. 3) having two opposed portions (corresponding to layer 25 at the top of Fig. 1 and layer 23 at the bottom of Fig. 1 which are coextruded with a polymer that serves as a vapor barrier, see col. 2, lines 31-41) that are sealingly engaged with each other and from between which the terminals extend from the cavity (col. 2, lines 31-50, col. 4, lines 16-48 and Fig. 1, 3 and 4). Louie et al. teach a sealant

layer (corresponding to polymer sealing strip, item 30) disposed intermediate the inner barrier layer and the terminals (see Fig. 3). Louie et al. teach an outer barrier layer (corresponding to either layer 23 or 27 at the top of Fig. 1 and either layer 25 or 27 at the bottom of Fig. 1- layers 23 and 25 are coextruded with a polymer that serves as a vapor barrier and layer 27 is polyvinylidene chloride, which is a vapor barrier, see col. 2, lines 31-44) that is bonded to the inner barrier layer (Fig. 1). Louie et al. teach that the package has a metal layer (metal foils 14 and 26, col. 2, lines 50-55).

In regard to claim 49, Louie et al. teach a laminate package for an energy storage device (col. 1, lines 5-10 and Fig. 3 and 4) having two terminals (items 34 and 36, col. 3, lines 21-24 and 54-67 and Fig. 1, 3 and 4). Louie et al. teach that the laminate package includes an inner barrier layer (corresponding to layer 25 at the top of Fig. 1 and layer 23 at the bottom of Fig. 1 which are coextruded with a polymer that serves as a vapor barrier, see col. 2, lines 31-41) for defining a cavity to contain the energy storage device (Fig. 3). Louie et al. teach a sealant layer (corresponding to polymer sealing strip, item 30) disposed between, and sealing engaged with, the inner barrier layer and the terminals (see Fig. 3). Louie et al. teach an outer barrier layer (corresponding to either layer 23 or 27 at the top of Fig. 1 and either layer 25 or 27 at the bottom of Fig. 1- layers 23 and 25 are coextruded with a polymer that serves as a vapor barrier and layer 27 is polyvinylidene chloride, which is a vapor barrier, see col. 2, lines 31-44) that is bonded to the inner barrier layer (Fig. 1). Louie et al. teach that the package has a metal layer (metal foils 14 and 26, col. 2, lines 50-55). Louie et al. teach that the package sealingly contains the energy storage device and the terminals are accessible from outside the package (Fig. 3). The phrase "for allowing external electrical connection to the energy storage device" is an intended use

phrase which has not been given patentable weight, since it has been held that a recitation with respect to the manner in which a claimed article is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQd 1647 (1987).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U:S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 43-48 and 50-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Louie et al. in view of Sasaki et al.

In regard to claims 43-45, Louie et al. teach the package as discussed above.

Louie et al. fail to teach that the sealant layer is Nucrel™ resin containing between about 5% and 10% ethylene acrylic acid. As established in the 35 U.S.C. 112 rejection of claim 43, the trademark Nucrel does not identify or describe the goods associated with the trademark or trade name; i.e. the trademark Nucrel does not recite the composition of the sealant layer. Sasaki et al.

disclose a container (item 5) for an energy storage device having two terminals (corresponding to the leads labelled "3") (col. 8, lines 15-25 and col. 17, lines 34-44 and Fig. 8). Sasaki et al. disclose that a heat fusion bonding seal material is coated onto the leads (item 3) and covers the outer periphery of the lower and upper layers of the container, where the heat fusion bonding seal material coating on the leads is labelled "1" in Figure 8, and the periphery covered by the heat fusion bonding seal material is labelled "2" in Figure 8 (col. 17, lines 34-54). Sasaki et al. disclose that the heat fusion bonding seal material is ethylene acrylic acid copolymer, ethylene methacrylic acid copolymer, or combinations of these materials with any polyethylene resin (col. 9, lines 15-21, col. 19, lines 35-38 and 47-62 and col. 19, line 65-col. 20, line 27) and that the resulting resins absorb very small amounts of water. Therefore, one of ordinary skill in the art would have recognized to have used the mixture of ethylene acrylic acid copolymer and any polyethylene resin as the sealant of Louie et al., since a mixture of ethylene acrylic acid copolymer and any polyethylene resin is a suitable sealant material for use in containers of energy storage devices having terminals that absorb acceptable amounts of water as taught by Sasaki et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the mixture of ethylene acrylic acid copolymer and any polyethylene resin as the sealant of Louie et al., since a mixture of ethylene acrylic acid copolymer and any polyethylene resin is a suitable sealant material for use in containers of energy storage devices having terminals that absorb acceptable amounts of water as taught by Sasaki et al.

In regard to the claimed amount of ethylene acrylic acid of "between about 5% and 10%" as claimed in claim 43 and of "about 6% to 9%" as claimed in claim 44, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to have determined the relative amount of ethylene acrylic acid in the mixture of ethylene acrylic acid copolymer and any polyethylene resin of Sasaki et al. required to achieve the optimal sealing and water absorption properties depending on the particular desired end result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In regard to claim 45, the mixture of ethylene acrylic acid copolymer and any polyethylene resin of Sasaki et al. is an acid modified polyolefin.

In regard to claims 46 and 50, Louie et al. teach the package as discussed above. Louie et al. fail to explicitly teach that the melting point of the outer barrier layer is higher than the melting point of the inner barrier layer. Sasaki et al., however, disclose that the walls of the container have a laminate structure having a sheath layer (item 17) that corresponds to the outer barrier layer as claimed by Applicant and a sealant layer (item 19) that corresponds to the inner barrier layer as claimed by Applicant (col. 11, lines 20-33 and Fig. 6A, 6B, 7 and 8). Sasaki et al. disclose that the melting point of the sheath layer (item 17, the outer barrier layer as claimed) is higher than the sealant layer (item 19, the inner barrier layer as claimed) (col. 11, lines 20-26). Sasaki et al. disclose that as a result of heating and cooling below the melting point of the material of the sealant layers, the sealant layers (item 19) of the upper and lower walls of the container are strongly heat fusion bonded together (col. 12, lines 36-49). One of ordinary skill in the art would have recognized that the higher melting point of the outer barrier layer relative to that of the inner barrier layer enables the walls of the container to be heated to a temperature at which the material of inner barrier layer softens while the material of the outer barrier layer is

unaffected so that the inner barrier layers are strongly heat fusion bonded together upon cooling to below the melting point of the inner barrier layer while the outer barrier layer is not affected. Therefore, one of ordinary skill in the art would have recognized to have selected the materials of the inner and outer barrier layers of Louie et al. such that the melting point of the outer barrier layer is higher than the melting point of the inner barrier layer in order to enable the walls of the container to be heated to a temperature at which the material of inner barrier layer softens while the material of the outer barrier layer is unaffected so that the inner barrier layers are strongly heat fusion bonded together upon cooling to below the melting point of the inner barrier layer while the outer barrier layer is not affected as taught by Sasaki et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the materials of the inner and outer barrier layers of Louie et al. such that the melting point of the outer barrier layer is higher than the melting point of the inner barrier layer in order to enable the walls of the container to be heated to a temperature at which the material of inner barrier layer softens while the material of the outer barrier layer is unaffected so that the inner barrier layers are strongly heat fusion bonded together upon cooling to below the melting point of the inner barrier layer while the outer barrier layer is not affected as taught by Sasaki et al.

In regard to claims 47, 48, 51 and 52, Louie et al. teach the package as discussed above. Louie et al. fail to explicitly teach that the melting point of the inner barrier layer is greater than or equal to the melting point of the sealant layer. Sasaki et al., however, discloses that the melting point of the inner barrier layer (item 19) is greater than the melting point of the heat fusion bonding seal material (col. 11, lines 26-33). Sasaki et al. discloses that upon cooling of the

heat fusion bonding seal material (item 1) which is coated on the terminals to below the melting point of the heat fusion bonding seal material (item 1), the heat fusion bonding seal material (item 1) is bonded more strongly to the metal of the terminal than to the inner barrier layer, and therefore an excellent adhesion between the metal of the terminal and the heat fusion bonding seal material (item 1) is obtained (col. 12, lines 44-60 and col. 19, lines 35-39). Therefore, one of ordinary skill in the art would have recognized to have selected the materials of the sealant layer and the inner barrier layer of Louie et al. such that the melting point of the inner barrier layer is higher than the melting point of the sealant layer in order to obtain excellent adhesion between the metal of the terminal and the sealant material (the heat fusion bonding seal material, item 1 of Sasaki et al.) as taught by Sasaki et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the materials of the sealant layer and the inner barrier layer of Louie et al. such that the melting point of the inner barrier layer is higher than the melting point of the sealant layer in order to obtain excellent adhesion between the metal of the terminal and the sealant material (the heat fusion bonding seal material, item 1 of Sasaki et al.) as taught by Sasaki et al.

In regard to claims 53 and 54, Louie et al. teach a laminate package for an energy storage device (col. 1, lines 5-10 and Fig. 3 and 4) having two terminals (items 34 and 36, col. 3, lines 21-24 and 54-67 and Fig. 1, 3 and 4). Louie et al. teach that the laminate package includes an inner barrier layer (corresponding to layer 25 at the top of Fig. 1 and layer 23 at the bottom of Fig. 1 which are coextruded with a polymer that serves as a vapor barrier, see col. 2, lines 31-41) for defining a cavity to contain the energy storage device (Fig. 3). Louie et al. teach a sealant

layer (corresponding to polymer sealing strip, item 30) disposed between, and sealing engaged with, the inner barrier layer and the terminals (see Fig. 3). Louie et al. teach an outer barrier layer (corresponding to either layer 23 or 27 at the top of Fig. 1 and either layer 25 or 27 at the bottom of Fig. 1- layers 23 and 25 are coextruded with a polymer that serves as a vapor barrier and layer 27 is polyvinylidene chloride, which is a vapor barrier, see col. 2, lines 31-44) that is bonded to the inner barrier layer (Fig. 1). Louie et al. teach that the package has a metal layer (metal foils 14 and 26, col. 2, lines 50-55).

Louie et al. fail to explicitly teach that the melting point of the sealant layer is less than the melting point of the inner barrier layer or that the melting point of the outer barrier layer is greater than the melting point of the inner barrier layer.

Sasaki et al., however, disclose that the walls of the container have a laminate structure having a sheath layer (item 17) that corresponds to the outer barrier layer as claimed by Applicant and a sealant layer (item 19) that corresponds to the inner barrier layer as claimed by Applicant (col. 11, lines 20-33 and Fig. 6A, 6B, 7 and 8). Sasaki et al. disclose that the melting point of the sheath layer (item 17, the outer barrier layer as claimed) is higher than the sealant layer (item 19, the inner barrier layer as claimed) (col. 11, lines 20-26). Sasaki et al. disclose that as a result of heating and cooling below the melting point of the material of the sealant layers, the sealant layers (item 19) of the upper and lower walls of the container are strongly heat fusion bonded together (col. 12, lines 36-49). One of ordinary skill in the art would have recognized that the higher melting point of the outer barrier layer relative to that of the inner barrier layer enables the walls of the container to be heated to a temperature at which the material of inner barrier layer softens while the material of the outer barrier layer is unaffected so that the inner

barrier layers are strongly heat fusion bonded together upon cooling to below the melting point of the inner barrier layer while the outer barrier layer is not affected. Furthermore, Sasaki et al., discloses that the melting point of the inner barrier layer (item 19) is greater than the melting point of the heat fusion bonding seal material (col. 11, lines 26-33). Sasaki et al. discloses that upon cooling of the heat fusion bonding seal material (item 1) which is coated on the terminals to below the melting point of the heat fusion bonding seal material (item 1), the heat fusion bonding seal material (item 1) is bonded more strongly to the metal of the terminal than to the inner barrier layer, and therefore an excellent adhesion between the metal of the terminal and the heat fusion bonding seal material (item 1) is obtained (col. 12, lines 44-60 and col. 19, lines 35-39). Therefore, one of ordinary skill in the art would have recognized to have selected the materials of the sealant layer, the inner barrier layer and the outer barrier layer of Louie et al. such that the melting point of the outer barrier layer is higher than the melting point of the inner barrier layer in order to enable the walls of the container to be heated to a temperature at which the material of inner barrier layer softens while the material of the outer barrier layer is unaffected so that the inner barrier layers are strongly heat fusion bonded together upon cooling to below the melting point of the inner barrier layer while the outer barrier layer is not affected as taught by Sasaki et al. and such that the melting point of the inner barrier layer is higher than the melting point of the sealant layer in order to obtain excellent adhesion between the metal of the terminal and the sealant material (the heat fusion bonding seal material, item 1 of Sasaki et al.) as taught by Sasaki et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the materials of the sealant layer, the inner barrier layer and the outer

barrier layer of Louie et al. such that the melting point of the outer barrier layer is higher than the melting point of the inner barrier layer in order to enable the walls of the container to be heated to a temperature at which the material of inner barrier layer softens while the material of the outer barrier layer is unaffected so that the inner barrier layers are strongly heat fusion bonded together upon cooling to below the melting point of the inner barrier layer while the outer barrier layer is not affected as taught by Sasaki et al. and such that the melting point of the inner barrier layer is higher than the melting point of the sealant layer in order to obtain excellent adhesion between the metal of the terminal and the sealant material (the heat fusion bonding seal material, item 1 of Sasaki et al.) as taught by Sasaki et al.

In regard to claims 55 and 58, Sasaki et al. discloses that the sealing engagement between the sealing layer and both the terminals and the inner barrier layer is affected by the combination of thermal energy and compressive forces (i.e. pressure) being applied to the layers (col. 12, lines 11-36), and therefore by thermal means as claimed in claim 55. The recitations "is affected by thermal means" and is "also affected by the combination of the thermal energy and compressive forces being applied to the layers" are method limitations that have been given little patentable weight since the method of forming the package is not germane to the issue of patentability of the package itself.

In regard to claims 56 and 57, the recitations "the thermal means applies thermal energy to the package to soften the sealant layer preferentially to the inner barrier layer" and "the application of the thermal energy softens the inner barrier layer to preferentially to the outer barrier layer" are method limitations that have been given little patentable weight since the

method of forming the package is not germane to the issue of patentability of the package itself. Also, see the 35 U.S.C. 112 rejection of claims 56 and 57.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5,948,562 to Fulcher et al., US 5,445,856 to Chaloner-Gill and US 5,326,652 to Lake.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 703-305-4511. The examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm and on alternate Fridays from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 703-308-4251. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

wba
07/24/03 WBA

Alexander S. Thomas

ALEXANDER S. THOMAS
PRIMARY EXAMINER